FT. McCLELLAN BCT MINUTES
PARTNERING MEETING #66
ANNISTON, ALABAMA
FEBRUARY 14-16, 2006

AGENDA ITEM	RESPONSIBILITY	NOTES
1. Check In Guest Introduction and Roles	Host: Lisa Holstein Leaders: Mike Kelly/Doyle Brittain Recorder: Troy Winton	See Attendees List – Attachment A.
2. Ground Rules	BCT	Attachment B provides the ground rules, as revised in January 2001.
3. Agenda	BCT	Attachment C provides the agenda outline. Attachment D provides the February 2006 meeting summary.
4. Accept Previous Minutes	BCT	The team reviewed the draft October 2004 and January 2005 minutes and approved them without changes.
5. Action Items	BCT	Action items were reviewed and updated, as indicated in Attachment D.
6. Long-Term Planning (BCP)	BCT	IT (Shaw) provided a final BCP on December 21, 2001.
7. Goals/Metrics Update	BCT	The team began brainstorming this topic during the June 1998 meeting, and also began development of preliminary goals for consideration by the group. This topic requires the BCT to set aside schedule time to address.
8. Facilitator Observations	David Smith	See Attachment E.

ATTACHMENT A

LIST OF PARTICIPANTS
BCT PARTNERING MEETING #66
FEBRUARY 14-16, 2006

Participants:

Name	**Agency/Company**	**Telephone**	**E-mail**
Brandi Little	ADEM	334-274-4226	BLittle@adem.state.al.us
Labarron Rudolph	ADEM	334-270-5646	FRudolph@adem.state.al.us
Steven Young	Matrix Environmental	303-572-0200	steve_young@matrixdesigngroup.com
David Smith	Smith/Associates	918-625-9024	CorpPsych@aol.com
Lee Coker	USACE	251-690-3099	Lee.D.Coker@sam.usace.army.mil
Mike Kelly	AEC	410-436-1506	michael.kelly@aec.apgea.army.mil
Lia Gaizick	AEC	410-436-1516	lia.gaizick@us.army.mil
Larry Tannenbaum	CHPPM	410-436-5210	larry.tannenbaum@us.army.mil
Lisa Holstein	Fort McClellan TF	256-848-7455	lisa.holstein@us.army.mil
Gary Harvey	Fort McClellan TF	256-848-3847	gary.e.harvey@us.army.mil
Karen Pinson	Fort McClellan TF	256-848-6831	karen.pinson@us.army.mil
Mark Houston	USFWS	732-321-6609	mark_huston@fws.gov
Peter Tuttle	USFWS	251-441-6633	Pete_Tuttle@fws.gov
Doyle Brittain	EPA, Region 4	404-562-8549	brittain.doyle@epa.gov
Sharon Thoms	EPA, Region 4	404-562-8666	thoms.sharon@epa.gov
Steve Moran	Shaw Environmental	865-694-7361	Steve.G.Moran@shawgrp.com
Richard Prann	Shaw Environmental	610-241-2036	Rich.Prann@shawgrp.com
Paul Goetchius	Shaw Environmental	315-682-0395	Paul.Goetchius@shawgrp.com
Troy Winton	Shaw Environmental	865-670-2698	James.Winton@shawgrp.com
Karen Thorbjornsen	Shaw Environmental	865-690-3211	Karen.Thorbjornsen@shawgrp.com

ATTACHMENT B

BCT GROUND RULES

General:

1. Leave rank and title at the door, and have a free and open discussion on any subject affecting the BCT.
2. Work smarter, not harder: create ways to simplify and streamline the BCT process.
3. Identify and express individual team members' sensitive issues, and agree to keep them within the team.
4. Alert other team members of any changes in cost or schedules.
5. Rotate meeting leaders.
6. Have fun.

Meeting Behavior:

1. Come prepared; do your homework.
2. Participate fully: offer your perspective and advice for the benefit of the whole team.
3. Listen to others' views and opinions, try to understand their needs, respect them, and work to resolve differences, and support team decisions.
4. Draw out other members: be open to other ideas and different perspectives.
5. Avoid interruptions and side conversations.
6. Call time out when necessary.
7. Make decisions by consensus: all in agreement, all owning the decision.
8. Turn off cell phones.

ATTACHMENT C

BCT MEETING AGENDA

1. Check In
2. Guest Introduction/Role in Meeting
3. Review Ground Rules (Attachment B to these minutes)
4. Finalize Agenda with additions and/or subtractions (Item 9 of this Attachment)
5. Accept Previous Meeting Minutes
6. Review Action Items from Previous Minutes (Attachment D to these minutes)
7. Review Long-Term Planning (BCP)
8. Goals/Metrics Update
9. Accomplish Agenda Items
10. Meeting Summary Review

    - Set next meeting date
    - Set next meeting agenda
    - Set time and date for conference call
    - Set meeting dates for next six months
    - Review action and consensus items
    - Review and evaluate Partnering Process

ATTACHMENT C
BCT MEETING AGENDA
FEBRUARY 2006

1. **Where does Background Assessment fit in risk assessment?**

   - Need to develop a clear, mutually agreed-upon protocol for using background assessments in identifying COPCs.

2. **Adequacy of Background Data Set / COPC Detection Limits**

   - Some constituents have detection limits greater than BTVs and/or ESVs but because they were not detected they were not included as COPECs. How should these constituents be handled in the identification of COPCs?

   - Some constituents in background data set have numerous non-detects or elevated detection limits (e.g. Sb, Cd, Tl). How are these constituents treated?

3. **Surface bullets**

   - EPA still questions the practice of removing bullet fragments from soil samples prior to chemical analysis. How does weathering and breakdown of bullet fragments affect future lead concentrations in soil? How can we incorporate the weathering and breakdown of bullet fragments into the human health and ecological risk assessments?

4. **Use of a Hazard Index of 1.49 in calculating clean-up levels**

   - EPA questions the use of a HI of 1.49 in the back-calculation of clean-up levels and would prefer the use of a HI of 1.0.

5. **Geochemistry**

   - Ratio plots
   - Correlation plots with small data sets
   - Surface water, sediment & groundwater data

6. **Adequacy of investigations**

   - EPA has concerns that there are ranges at FTMC that have not been investigated sufficiently to issue a "close-out report."

7. **T-24A – Response to EPA Comments**

8. **Stump Dump – Response to USFWS Comments**

LIST OF ATTACHMENTS

Attachment 1 – EPA Unresolved Issues (Background Evaluations) - Updated information is included as Attachment D-1 of this package.

Attachment 2 – EPA Unresolved Issues (Geochemistry) - Updated information is included as Attachment D-2 of this package.

Attachment 3 – T-24A, Draft Response to EPA Comments - Final Response to Comments being developed and this attachment is not included

Attachment 4 – EPA Unresolved Issues (Miscellaneous) - Updated information is included as Attachment D-4 of this package.

Attachment 5 – EPA Unresolved Issues (Human Health Risk Assessment) - Updated information is included as Attachment D-5 of this package.

Attachment 6 – Stump Dump, Parcel 82(7), Response to USFWS Comments

Attachment 7 - Ecological Risk Assessment Issues addressed during Jan 05 meeting - Updated information is included as Attachment D-7 of this package.

ATTACHMENT D

MEETING SUMMARY
With
ACTION ITEMS

Next BCT Meeting: To be scheduled later.

Primary Agenda: See Attachment C

Meeting Summary for February 14-16, 2006:

Check-In – Participants introduced themselves and are listed on Attachment A.

Finalize Agenda and Minutes – After being given a chance to review the minutes overnight, the team approved the October 2004 and January 2005 meeting minutes without changes.

Action Items – There were no action items pending for review.

Document Status Tracking – Lisa provided the team with the latest version of the document status tracking spreadsheet and pointed out a couple of minor mistakes. Bold entries are priority.

Agenda Item #1, Where Does Background Fit in Risk Assessment?

This issue is summarized as item #4 in the Background Evaluations worksheet. (Attachment D-1, Item #4). A proposal was made USFWS proposed keeping metals in risk assessments if they fail screening and then discuss in Uncertainty Section. Sharon Thoms (EPA) reiterated that the comment was more one of communication that certain metals may present a risk but are not site related (i.e., screened in for risk but screened out for background). The group agreed that the discussion in the Uncertainty Section doesn't need to be as quantitative.

When discussing this issue, the group reviewed General Response #1 of T-24A comments.

Resolution: The Army will identify constituents that exceed screening valuses but are less than concentrations considered representative of background in the Uncertainty Section of risk assessments. The team agreed on the following sample language that could be used in the Ft. McClellan reports: "chemical *'x'* exceeded conservative risk-based screening value but was below background and, therefore, is not evaluated further (risks not quantified)."

Future revisions to the Ft McClellan RI reports will add a table to Chapter 4.0 (Nature & Extent) to summarize the inorganic data evaluation, which includes the assessment whether metals detected in site soil are representative of background conditions or potentially site related. A subgroup of the large multi-stakeholder group will look at how the Wilcoxen Rank Sum is applied in Tier 2 of the Background Evaluation Protocol. The geochemical evaluation (Tier 3) will also consider additional lines of evidence (including statistical site-to-

background comparison tests, site history, documented use/known releases, detection frequency, spatial distribution, geochemistry, etc.) when making the background determination. Metals identified as background metals will not be evaluated in the risk assessments. This applies to all media. The table will be structured as follows:

"Summary of Inorganic Data Evaluations"

Metal	Results of Tier 1 Evaluation	Results of Tier 2 Evaluation	Results of Tier 3 Evaluation	Other Lines of Evidence	Background Metal? Y/N

Text to be provided at the end of the table explaining the various lines of evidence and rationale for inclusion/exclusion as a background metal.

Attachment D-1, Comment 7a (Issues with Current Background Data Set)

Comment identifies concern over high percentage of non-detects in a data set or high detection limits.

- Resolution – Shaw will address this comment by adding additional text to the Uncertainty Section. A subgroup of the large multi-stakeholder group will look at high detection limits for antimony, selenium, cadmium, silver, and thallium.

Attachment D-1, Comment 7c

Comment identifies concern over high detection limits in background data set.

- Resolution - Same as Comment 7a.

Attachment D-2, Comment 5 (Problems with Detection Limits Should be Discussed)

Comment applies to metals in site data with consistent nondetects above screening levels.

- Resolution – Shaw will add information to the Uncertainty Section regarding nondetects in the site data set. This information will consist of a paragraph discussing the nondetects generically, not by individual metal. The additional text will discuss whether metals were likely to be used in the past based on the understanding of site history.

Day 2, February 15, 2006

After brief recap of previous day's discussion, the group moved to Agenda Item #3, Surface Bullets.

Agenda Item #3, Surface Bullets

EPA's main concern is future lead levels due to weathering. Current conditions are adequately addressed. Larry Tannenbaum (CHPPM) expressed concern that the Army would be setting a precedent in doing interim removal actions for "hot spots" when there are not enough data to conclusively say whether lead levels are increasing.

EPA wants to add a caveat to the risk assessments regarding the uncertainty of future lead levels. Also asked that Steve Moran (Shaw) prepare a table with three types of lead sites:

1. SIs – no bullets, low lead levels.
2. RIs – lots of bullets, high lead levels.
3. "In-between" sites – some bullets present but sporadically distributed, lead levels below SSSLs but may exceed ESVs in a limited number of samples.

Pete Tuttle (USFWS) reiterated FWS concerns concerning future lead levels particularly in view of site conditions (e.g., Longleaf pine presence) or USFWS activities (e.g., controlled burns). Feels that this is FWS's chance to address this issue.

EPA asked if a "worst case" scenario could be developed and run through the risk assessment. Paul Goetchius (Shaw) noted that RAGS Part A requires reasonable maximum exposure (RME) only; it does not require that worst case be evaluated. Paul G. stated that there is tremendous potential to misrepresent risk because of the huge uncertainty associated with the future lead concentrations that may arise from weathering. Larry T. noted that evaluating worst case would only be an academic exercise.

- Resolution: Recent reports (written since Jan 05) have qualitatively addressed the uncertainty regarding future lead concentrations in soil for all ranges where surface bullets or shot were mentioned in the site descriptions. This practice will continue.

Agenda Item #4, Use of HI = 1.49

EPA wants to use HI = 1.0, not 1.49 as the basis for estimating cleanup levels for the noncancer effects of contaminants of concern (COC). Paul G. discussed the streamline risk assessment (SRA) approach that was adopted at FTMC and that RAGS Part A and the Region 4 human health risk assessment bulletins say to round to one significant figure. Paul also noted that former EPA risk assessor Ted Simon provided him with the model language adapted to each SRA since January '05. Using a HI of 1.49 was considered acceptable because future cleanups would be based on "not to exceed" type approach. Doyle B. (EPA) indicated that he did not agree with Ted on this issue and does not want to give the appearance of impropriety (i.e., this is a language problem not a risk problem). Part of the language problem is that too much attention is given to justifying the HI of 1.49 so that it may appear that we are 'working the system' although the cleanup levels developed would be sufficiently protective.

At Sharon's request, a subgroup formed to call to EPA human health risk assessors and get

their input on the proposed resolution. It was later reported that the EPA human health risk assessors agreed with the proposed approach as outlined for the group on the call by Doyle.

This issue was raised in Specific Comment 19 of Attachment 3 (EPA comments on the T-24 Alpha draft RI) of the original agenda. It should be considered also in the context of Specific Comment 20. Specific Comment 19 calls for estimation of a range of remedial goal options (RGO) based on HI values of 0.1, 1, and something higher, as described in the Region 4 human health risk assessment bulletins. Specific Comment 20 cautions against language that obscures the distinction between risk assessment and risk management and that leaves the impression that the risk assessment is compelling a certain risk management decision. Paul G. noted that the SRA work plan did not include development of typical Region 4 RGOs because the site-specific screening levels (SSSL), on which the whole SRA protocol is based, are themselves risk-based remedial options.

- Resolution: The Army recognizes the benefits of including a RGO table based on multiple risk levels to ensure preserving the distinction between risk assessment and risk management. Paul G. will revise the relevant RI documents to include an RGO table addressing HI values of 0.1, 1, 1.49 and 3, consistent with the Region 4 bulletins. The rationale for each of the HI levels will be briefly explained.

Agenda Item #5, Geochemistry

Much of EPA's concern re: geochemistry was diminished in light of discussions held the previous day (Day #1) concerning background and the agreement to use geochemistry as one of several lines of evidence in the new table to be added to Chapter 4.0 (Nature & Extent) of the reports. Sharon T. indicated she still has concerns about how it is used (rather than the mechanics of the process) but is generally OK with geochemistry as a line of evidence.

The discussion also addressed Attachment D-2, Comment 1 (Non detects/High Detection Limits in Site Data Set)

- Resolution: This issue will be addressed in the Uncertainty Sections and in the new table to be added to Chapter 4.0 of the reports to clarify how geochemistry was used in the background determination.

Day 3, February 16, 2006

Agenda Item #8, Stump Dump Comments

The group reviewed Shaw's responses to USFWS comments on the draft SI report for the Stump Dump. Pete T. read through each of the comments and indicated that the responses were acceptable as written.

Pete T. then brought up the issue of land use restrictions at the Stump Dump (e.g., controlled

burns, Longleaf pine growth). Doyle T. (EPA) indicated that he was OK with controlled burns and vegetative growth. Brandi L. (ADEM) stated that she will review with the appropriate personnel and respond to FWS regarding ADEM's position.

- Resolution: Following ADEM's response to FWS, Shaw will finalize the SI report and prepare a decision document (for HTRW only – UXO issues may exist).

Geochemistry, Part II

The group revisited this topic. Geochemistry will be used as one line of evidence in the new table to be included in Chapter 4.0, Nature & Extent. Doyle T. (EPA) indicated that he is OK with the process as proposed.

Paul G. will revise the response to T-24A General Comment #1 (re: application of geochemistry at FTMC) to reflect the agreements reached at this meeting.

Agenda Item #6, Adequacy of Investigations

Doyle B. (EPA) summarized EPA's concern that approximately 35 ranges mentioned in the Environmental Baseline Survey (EBS) have not been located. EPA needs to issue a site close-out report stating that every site has been address. Doyle wants the Army to ensure that appropriate investigations were conducted all sites identified in the EBS. Steve M. indicated that any "missing" ranges are probably identified in the Archives Search Report (ASR) and that Shaw included these ranges in the various site-specific work plans. Nevertheless, Doyle still needs documentation to close out these sites.

- Resolution: Army will prepare a "crosswalk" table addressing the 35 missing ranges and submit to EPA.

Agenda Item #7, T-24A Comments

The group acknowledged that many of the issues identified in the T-24A comments had been previously addressed and that is was not necessary to go through on a comment-by-comment basis. However, several comments were specifically discussed as follows:

- General Comment #4 (*Leaching from Soils to Groundwater*) – EPA OK with the response along with the other changes to be made.

- General Comment #11 (*Vapor Intrusion*) – EPA and FWS OK with response.

- Specific Comment #14 (*Combining Data Across Ranges*) – Not discussed specifically, but Paul G. explained during discussion of Agenda Item #4 that the comparison of individual sample results with cleanup levels identifies any location where risks could exceed acceptable limits regardless of how individual exposure units were drawn.

- Specific Comment #17 (*COPC Summary Table*) – EPA OK with response.
- Specific Comment #27 (*COPC Selection Process*) – EPA OK with response.
- Specific Comment #28 (*Dioxin TEQs*) – Sharon T. to discuss with EPA human health risk assessors.

1320 – Meeting wrap-up, facilitator's comments, and formation of sub-groups.

Next Meeting – Not scheduled but expected to occur in mid April or early May 2006.

ACTION ITEMS

Item	Action	Responsibility
1	Sub-group to convene and modifying Tier 2 process to raise WRS test confidence level (multiple tests being performed)	Sharon, Paul, Karen, Larry
2	Sub-group to convene and discuss "problem" metals in background data set (Sb, Cd, Se, Ag, Tl).	Karen, Sharon, Paul, Rich
3	Develop list of three types of lead sites	Steve, Lisa, Pete
4	Add caveat to Uncertainty Section of risk assessments re: future lead levels.	Paul, Rich
5	Add discussion of nondetects to Uncertainty Section.	Paul, Rich
6	Finalize Stump Dump SI Report & prepare Decision Document.	Troy
7	Revise response to T-24A General Comment #1 re: application of geochem at FTMC	Paul
8	Prepare "crosswalk" table for 35 "missing" ranges identified in EBS.	Mike/Lisa
9	Ranges/reuse	Steve, Lisa, Pete
10	Add new table ("Summary of Inorganic Data Evaluations") to Ch. 4 re: background metals & lines of evidence.	Troy

ATTACHMENT NO. D-1 - BACKGROUND EVALUATIONS

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
1. The ' weight of evidence' approach should be used in site to background comparisons. The weight of evidence approach, which includes traditional statistical comparisons between site and background results, should be retained for background comparisons. These methods typically include comparisons of means/medians, tests for outliers, comparisons of site data to background UTLs, box and whisker plot comparisons and others. Each statistical test, however, should be designed to control Type I and Type II errors with the same alpha and beta. Progression to successive tiers should not imply a reduction in statistical power. These methods are valuable tools in discerning occurrences of metals (and possibly some PAH or pesticide compounds) at natural background or anthropogenic background concentrations.	Methods of Comparison-Resolved YES for Control of Type 1 and Type II error- **NO** for geochemical methods (see Geochemistry Table)	Discontinue using the Slippage Test and replace with 95th UTL screen. Provide ratio plots in the evaluations. Need further discussion in the text of the reports justifying placement of the threshold value (vertical line) in the plots. Revise the Background Memo describing the 3-tiered approach (e.g., replace Slippage test, add explanation of ratio plots).		Yes			Issue resolved. The geochemical evaluation will be used in conjunction with other lines of evidence (see Feb. 2006 meeting minutes).
2. Background terminology requires clarification. The terminology used in the geochemical evaluation does not distinguish anthropogenic background from naturally-occurring background. The distinction between naturally-occurring, anthropogenic, and site-related trace metals using geochemistry is not clear. For example, a soil sample with higher clay content can be expected to have higher metals concentrations, but that does not prove that the metals found there are natural. This argues for a weight-of-evidence approach, including agreement among all parties on the appropriate background data set(s).	YES			Yes			
3. Site history/use must be considered when selecting constituents for risk assessment. According to RAGS Part A, background screening is conducted to distinguish site-related contamination from naturally occurring or other non-site related levels of chemicals. Process-related chemicals, i.e., lead bullets at firing ranges, provide undeniable evidence that lead detected at levels exceeding site-specific background is site-related and should be carried forward into the risk assessment. A statistical evaluation, no matter what the degree of statistical significance, cannot substitute for forensic evidence from site history.	YES	EPA restated its official position that expended bullets on the ground surface constitute a CERCLA release but noted that EPA will not make an issue of it at this time. Ron noted that most of the surface bullets will be removed during remediation of the various sites.		Yes			

ATTACHMENT NO. D-1 - BACKGROUND EVALUATIONS

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
4. Constituents above ecological screening criteria but below background should be considered for risk potential. Contaminants that exceeded the ESVs but occurred at levels below background should be mentioned as presenting potential risk, although not related to the site as per OSWER Directive 9285.7 41.	**NO**	EPA discussed that this point was unclear in the ERA and that further clarification is required in the ERA. This item requires further discussion and resolution within the working group. EPA had mentioned that at other sites, risks from constituents screened as background are qualitatively or semi-quantitatively addressed in the uncertainty section. In addition, EPA has furnished comments on the T-5 Training Area Draft RI Report which contains further direction in this area	No	Yes	EPA discussed this point it was unclear if a resolution was reached.	At other sites, risks from constituents screened as background are qualitatively or semi-quantitatively addressed in the uncertainty section. Note that further EPA comments are provided on the T-5 Training Area Draft RI Report.	Issue resolved. These constituents will be addressed in the Uncertainty Sections of the risk assessments.
5. Communication of contaminant presence is dictated by EPA Background Policy. The presence of concentrations of lead or other constituents detected at levels above risk assessment benchmarks must be communicated to the public in the baseline risk assessment as per OSWER Directive 9285.6-07P.	**NO**	EPA discussed that this point was unclear in the ERA and that further clarification is required in the ERA. This item requires further discussion and resolution with the Work Group.		Yes	EPA discussed this point it was unclear if a resolution was reached.	At other sites, risks from constituents screened as background are qualitatively or semi-quantitatively addressed in the uncertainty section.	Issue resolved. These constituents will be addressed in the Uncertainty Sections of the risk assessments.
6. Use of the Upper Background Range requires discussion. Consensus is needed regarding use of the Upper Background Range (comparison of the maximum detected concentration in site media to twice the arithmetic mean, 95th UTL, or 95th percentile of the background data). The only EPA Region 4 approved background comparison is the comparison of the maximum concentration detected for a given chemical to 2 times the arithmetic mean concentration of that chemical detected in background samples. However, a discussion of the UBR is appropriate to provide insight about background concentrations.	YES	Discontinue using the Slippage Test and replace with 95th UTL screen.		Yes			

ATTACHMENT NO. D-1 - BACKGROUND EVALUATIONS

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
7. Issues with the current background data sets for Ft. McClellan:							
a. Although we have agreed to use a Base-wide background data set, it may not meet the needs of every site. Potential issues include differences in detection limits and analytical methods, sparse data, and differences in soil types. These factors may occasionally limit our ability to screen out chemicals detected at sites. This is an uncertainty we must accept unless we want to collect more data.	**NO**	A high percentage of non-detects and/or high detection limits exists for certain metals. A more well-defined method for handling these conditions in the screening procedure needs to be established as part of a work group discussion.	High percentage of non-detects and/or high detection limits for certain metals.	Yes			Issue resolved. The team agreed to accept the uncertainty. The general content of the comment will be added to the Uncertainty Sections of the risk assessments.
b. Background data used in the Site Investigations are from SAIC, 1998, Background Metals Survey Report, not the background data that appear in the Installation-Wide Work Plan. In most cases, differences between the values in these two documents are small (typically of the order of a few percent). Consensus is required for use of the SAIC (1998) background data sets for Ft. McClellan, on an element-by-element basis, for all media of interest.	YES	It was pointed out that the only approved background data for FTMC are those provided in the SAIC Background Survey Report. EPA acknowledged this and indicated that its comment regarding adequacy of the background data was more of a statement rather than a request for change in procedure.		Yes			
c. High detection limits in the Ft. McClellan background data sets yield values that are biased high, but which have been used in the site-to-background comparisons. Where the background data set is inadequate to yield valid background comparison values, the constituent in question should be evaluated in the risk assessments.	**NO**		High percentage of non-detects and/or high detection limits for certain metals.	No			Issue resolved. The general content of the comment will be added to the Uncertainty Sections of the risk assessments.

ATTACHMENT NO. D-2 - GEOCHEMISTRY

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
1. Limitations of the geochemical evaluation methodology: The geochemical evaluation procedure should not be used as the sole basis for either elimination or inclusion of trace metals as Constituents of Concern (COCs). This process, as presented, is inadequate for this purpose due to:	YES	Revise the Background Memo describing the 3-tiered approach (e.g., replace Slippage test, add explanation of ratio plots).		Yes - see further discussion of sources of uncertainty in 3.through 7. (below)		EPA reiterated request for consideration of supporting information ("lines of evidence") in addition to results obtained from geochemical evaluations	
a. Effects of large numbers of non-detects and/or high detection limits in the site data sets	**NO**		High percentage of non-detects and/or high detection limits for certain metals (see 5.)	No		Some elements (e.g., antimony) are dropped as COPCs because results are consistently ND. Further discussions are required to decide on an approach to include/exclude nondetected chemicals.	Issue resolved. Such constituents will be addressed in the Uncertainty Sections of the risk assessments (paragraph that discusses NDs generically, not by individual metal).
b. Lack of statistical rigor; the Tier 3 portion of the geochemical evaluation procedure relies on visual assessment of scatter plots to make qualitative determinations of data that are either consistent with background (i.e., 'on the background trend') or signifying potential contamination (i.e., 'apparent outliers'). Without any statistical analysis, this method of discriminating between trace-metal concentrations that are naturally occurring and levels that are due to site-related activities is subjective and may lead to erroneous conclusions.	Two points YES One point **NO**	Discontinue using the Slippage Test and replace with 95th UTL screen. Provide ratio plots in the evaluations. Need further discussion in the text of the reports justifying placement of the threshold value (vertical line) in the plots.		Yes	Agreement was reached on discontinued use of the Slippage Test and replacement with 95th UTL; no resolution was reached on ratio plots.	EPA stated that the geochemical evaluation is only "minimally qualitative" and suggested further discussion to evolve to a more quantitative process. EPA also recommended further discussion of ratio plots, and advocated an alternative to using the maximum background ratio as the threshold value. Requires consensus on where the line should be (EPA recommends work group between technical team was mentioned to resolve this).	Issue resolved. The geochemical evaluation will be used in conjuction with other lines of evidence (see BCT meeting minutes).
2. The geochemical evaluation is not applicable to aqueous samples. The geochemical evaluation procedure, as presented, cannot and should not be applied to surface water or to groundwater data.	**NO**		Use of geochemistry for other environmental media (i.e., groundwater, surface water, and sediment).	No	Discussion was limited to soils.		Issue resolved. Geochemical evaluations for aqueous media will be retained. However, the evaluation will be only one of multiple lines of evidence used to determine if a metal is background-related.

ATTACHMENT NO. D-2 - GEOCHEMISTRY

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
a. Interpretation of data from aqueous samples involves a larger number of variables than for soils	**NO**			No			Issue resolved (see above).
b. Geochemical processes that control trace metal behavior in surface water and groundwater are more heterogeneous in space and time than processes affecting soil geochemistry	**NO**			No			Issue resolved (see above).
3. Site-specific conceptual models, using additional information, are needed in order to support the geochemical evaluations. Site-specific conditions and their influence on contaminant mobility, in all media of concern, should be incorporated into discussions of trace metal geochemistry.	YES	Use supporting information (i.e., additional lines of evidence).		Yes	Initially, Shaw said that there was enough lines of evidence in the Stats and geochemistry. EPA is looking for more lines to include soil types, grain size, site history, CSM, etc. Army appeared to agree with the request for these additional supporting data.	Supporting information (i.e., additional lines of evidence) rather than just stats and geochemistry could include: integrate information on site, history, CSM and sites-specific information on soils types based on boring logs, soil properties, grain-size , etc.).	
a. The geochemistry analysis does not explain exactly what it represents from a precise scientific standpoint. A specific geochemical mechanism cannot be inferred from trace-element ratios alone. Many mechanisms may contribute to the observed ratios, including sorption onto oxides, hydroxides, or oxyhydroxides of iron, manganese, or aluminum; coprecipitation (e.g., with carbonate or sulfate phases); uptake and/or sorption by sulfide phases; adsorption onto clay minerals; and complexation by naturally occurring soil organic matter. Unless additional information is sought for particular soil types, the fundamental science behind the method is not well defined and the geochemical evaluation process is more or less empirical.	YES **with caveat**			Yes, not in detail	Group discussion of the need to revisit language in text describing the geochemical evaluation to reflect sources of uncertainty; discussion did not address details.	This item requires additional clarification regarding expanding the discussions of the uncertainties associated with the geochemical evaluation. Discussions indicated that site-specific uncertainty analysis language is needed in addiiton to updating the "boiler plate language" to place the geochemical results in proper perspective, qualitatively and quantitatively.	Issue resolved. The geochemical evaluation will be used in conjuction with other lines of evidence (see BCT meeting minutes). Uncertainty discussions are included within the individual element evaluations.
b. The geochemical analysis should be consistent with the wealth of geological information available for Alabama. The geochemical analysis should consider a broader range of information than the point falling on a line to make a determination. This information should include bedrock and/or source material lithology, depositional processes and environments, tectonic setting, local and regional groundwater and surface water hydrology, etc.	YES			Yes, not in detail	Soil characterization needs to be incorporated into interpretations of site data	EPA requested incorporation of additional information, where available (soil types, information from boring logs, grain size data, clays and other mineralogy, etc.)	
c. There should be a consistent rationale for choosing the independent variable against which to plot the data. This rationale should be stated clearly and applied consistently; justification for changes to this rationale (for example, due to the nature o the site-specific soil type, localized geochemical conditions, etc.) must be provided.	YES			Yes	Shaw uses correlation coefficients for choosing the reference element (independent variable)	EPA requested incorporation of additional information, where available (soil types, information from boring logs, grain size data, clays and other mineralogy, etc.)	

ATTACHMENT NO. D-2 - GEOCHEMISTRY

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
d. Exceptions (data that are not consistent with a linear relationship) must be explained, and there must be a consistent rationale for examination of potential 'outliers' before a decision is made regarding inclusion or exclusion of suspect data.	**NO**			No	Screening of outliers is based on visual inspection of plots	EPA is providing more detail recommendations in their comments on FTMC Training Area T-5.	Issue resolved. Identification of outliers is not based on visual inspection, but is based instead on calculated elemental ratios.
4. Effects of different soil types should be incorporated. The different soil types found across Ft. McClellan should be described, and the effects of these different soil types on the geochemical evaluation should be acknowledged and discussed.	YES	Use supporting information (i.e., additional lines of evidence).		Yes, not in detail			
a. If the site data fall on a line with a steeper slope or the same slope but a greater intercept than the background data set, this may mean that the soil types are different. When soil types appear to be different, this is a data quality objectives problem. The background data set may not be representative of the site. Site-specific background data should be collected to address this uncertainty, if necessary.	YES	It was pointed out that the only approved background data for FTMC are those provided in the SAIC Background Survey Report. EPA acknowledged this and indicated that its comment regarding adequacy of the background data was more of a statement rather than a request for change in procedure.		Yes	EPA notes indicated that the Army may continue to use their current background data sets	Further clarification is necessary. The current background data set may not be representative of the site and as a consequence, there may be instances where evidence is insufficient to screen out a constitutent as background. Please see comment 7b regarding background evaluations.	
b. Surface and subsurface soils should be plotted separately for both the background and site soils due to differences in surficial processes that include chemical, microbial, and depositional effects unless statistical comparisons indicate that the data sets can be combined.	YES			Yes	EPA notes indicated that the Army agreed to this comment	EPA recommended keeping surface and subsurface soils separate, regardless of the outcome of statistical testing.	
5. Problems with detection limits should be acknowledged and discussed. Elements are dropped from consideration as Constituents of Potential Concern (COPCs) if the reported values are non-detects. Elements that might be dropped as COPCS due to consistent NDs are antimony (Sb), selenium (Se), cadmium (Cd), silver (Ag), and thallium (Tl).	**NO**			Yes			Issue resolved. Such constituents will be addressed in the Uncertainty Sections of the risk assessments (paragraph that discusses NDs generically, not by individual metal).
a. High detection limits for certain trace metals may yield inaccurate conclusions regarding contaminant distributions and concentrations.	**NO**		High detection limits for certain metals	Yes			Issue resolved (see above).

ATTACHMENT NO. D-2 - GEOCHEMISTRY

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
b. Trace metals with detection limits higher than the screening criteria should not be eliminated as COCs in the geochemical evaluations. Antimony, known to be present with lead in site soils, is often eliminated as a COC because all reported values for a given site are non-detects.	**NO**		High percentage of non-detects for certain metals	Yes	Just because all samples are below detection does not permit exclusion of the chemical as a COPC. As an example, antimony was detected in very few site samples; often, all site samples were reported as non-detects, at detection limits above the background criterion (twice the arithmetic mean), the site-specific screening level, and the ecological screening value. In such cases, EPA's position was that there was not enough evidence to eliminate it on the basis of comparison to background. Non parametric tests were suggested. EPA also suggested collection of additional data, with lower detection limits, in instances where the presence of site-related antimony was suspected. Further discussion is required to address the process for eliminating/ including metals due to elevated detection limits.	Elements should be retained as COPCs if detection limits are greater than screening criteria or select a more sensitive analytical method.	Issue resolved (see above).
6. Alteration of metallic lead to more soluble phases should be considered. Effects of weathering reactions on lead that is left in place must be identified and incorporated into risk evaluations. Phases such as lead carbonates, hydrous carbonates, sulfates, oxyhydroxides, etc. can form under on-site surficial conditions and these phases have different solubilities and therefore different transport behaviors.	**NO**	EPA would like to see additional detailed discussion and site-specific application of fate and transport methodologies to demonstrate to the potential mobility or lack there of, of lead in site soils. EPA has provided a proposal on methods (see Attachment 1) that may be necessary in order to address this issue. Consideration of the potential application of such methods at FTMC requires further discussions with the working group		Yes, not in detail	Shaw stated that fate and transport of Pb in FTMC soil is determined by local geochemical conditions and couldn't be predicted	See 3. on Misc. worksheet	Issue resolved. Uncertainty regarding future lead concentrations in soil is qualitatively identified in all SRAs written since January 2005 for all ranges where surface bullets or shot were mentioned in the site descriptions.
7. Uncertainties and limitations of the geochemistry evaluation should be discussed. Uncertainty regarding the geochemistry evaluation, from the perspective of the fundamental geochemical processes and mechanisms as well as the statistical methods, should be acknowledged.	YES	EPA to examine boilerplate uncertainty discussion in geochemical evaluation reports. Supplement/revise existing uncertainty discussions, as appropriate, with site-specific information. Begin with qualitative discussion.		Yes		EPA requests site-specific discussions of limitations and "unknowns" in the geochemical evaluation as part of the uncertainty analysis.	

ATTACHMENT NO. D-2 - GEOCHEMISTRY

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
8. The rigorous statistical analysis should consider both Type I and Type II errors. The transformation of the data to a log-log plot should be considered in terms of its effect on the residual errors. Confidence limits around a prediction made at the upper range of the graph are so large that the uncertainty in the method increases exponentially at the upper end of the distribution of naturally-occurring concentrations. At the upper end of the distribution the method loses the power to distinguish Type II errors that are important to regulators. The method has limited usefulness in a regulatory context unless Type II errors can be controlled.	YES **with caveat**	This issue appeared to be resolved at the meeting; however, confirmation is required from the Army with respect to minimizing Type II errors as well as concurrence on a minimum number of dat points to be used in the geochemical analysis. A path forward to address this comment needs to be identified. In addition, EPA wants to further clarify that if there is uncertainty regarding whether a chemical is site-related, the prudent approach is to include the chemical in the risk assessment.		Yes	The Army discussed their desire to minimize false positives (where a false positive means accepting that the site values are greater than background when it is false)	It is important for the Army to acknowledge that the EPA thinks that rejecting that site results are greater than background when it is true is a more serious error than accepting that the site results are greater than background when it is false.When there is uncertainty regarding whether a chemical is site-related or not, the prudent approach is to include the chemical in the risk assessment.	Issue resolved. Geochemical evaluation will be only one of multiple lines of evidence used to determine if a metal is background-related. This approach will address EPA's concerns regarding the false-negative error rate.
a. As part of controlling Type II errors, a requirement of a minimum number of data points is needed. Application of the geochemical analysis to two background data points and one site data point is inappropriate, as the number of data points is insufficient.	**NO**			Yes	EPA reiterated this point. No clear agreement or disagreement from the Army was listed in EPA's notes so it is assumed that the Army agrees with this point.	Data quantity and quality must be sufficient.	Issue resolved. Only detected concentrations can be included in geochemical evaluations, but there is value in comparing and visualizing the data even if detection frequency is low. Note that the geochemical evaluation will be used in conjuction with other lines of evidence.

ATTACHMENT NO. D-4 - MISCELLANEOUS

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
1. Adequacy of Site Characterization is questionable. It appears that many of the ranges in this document have not been fully characterized. This comment is true for various media associated with any given site. The potential for off-site migration of contaminants has not been sufficiently addressed. In addition, it is unclear that all ranges have been identified.	**NO**			Yes	No- EPA reiterated concerns that not all ranges are fully characterized or even identified. The Team did not discuss this point in open session.		
2. Inappropriate aggregation of data should be discussed and resolved. Aggregation of data from non-contiguous ranges into a single investigation is inappropriate and will not be accepted.	YES	The concern from the human health risk perspective arises from the fact that aggregating data that represent large geographic areas could result in apparent "dilution" of contaminant concentrations resulting in underestimating risks for receptors likely or largely restricted to smaller exposure units. However, Shaw explained that comparing all ambient site-related concentrations to conservatively developed cleanup levels precluded overlooking potentially hazardous concentrations regardless of how the exposure units were gerrymandered.		Yes			
3. Sampling methodology introduces inaccuracy in surface soil characterization. The removal of bullets and/or fragments prior to collection of sample serves to bias the sample and underestimates actual concentration of lead present in surface soil. OSWER Directive #9285.7-37 Risk associated with Pb left in place may be underestimated due to lack of knowledge of Pb-bearing phases formed by soil weathering processes.	**NO**	EPA restated its official position that expended bullets on the ground surface constitute a CERCLA release but noted that EPA will not make an issue of it at this time. Ron noted that most of the surface bullets will be removed during remediation of the various sites. Regarding human health risk assessment, Paul pointed out that particulate lead on the ground surface has few implications to human health under the current site-conditions scenario because (1) the acute accidental ingestion of a lead fragment would have little effect on human health because fragments of metallic lead have very low bioavailability, and (2) the hand-to-mouth activity considered to be the major phenomenon resulting in chronic incidental soil ingestion may result in ingestion of "fines" but not metallic lead fragments. Uncertainty arises regarding future site use or conditions because further weathering may increase the mobility of metallic lead in the fragments. The rate and extent to which this may occur, and the extent to which weathering may attenuate further weathering		Yes		See GF's suggested approach for resolving this issue. [See Attachment 1 in memo.]	**Resolved, please see Agenda Item #3 in minutes of February '06 meeting.**
4. Determination of release is adequate but additional steps are required. For most documents, the information included in the subject report adequately document that a CERCLA release has occurred and therefore, a Remedial Investigation and Feasibility Study (RI/FS) with a Baseline Risk Assessment (BRA) is needed to determine the nature and extent of contamination and the associated risk to human health and the environment.	YES			Yes	EPA reiterated concerns that not all ranges are fully characterized or even identified. The Team did not discuss this point in open session.		
5. Chain of Custody Issues. Samples should be collected and retained using appropriate Chain of Custody procedures.	YES			Yes	EPA indicated that this issue is resolved.		

ATTACHMENT NO. D-5 - HUMAN HEALTH RISK ASSESSMENT

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
1. Evaluation of Risks from Lead exposure. New guidance on addressing intermittent exposure at lead sites and performing human health risk assessment at shooting ranges has been developed by EPA and recently published (late 2003 and 2004). Recommendations in these documents should be applied to risk assessments of lead at Ft McClellan. Doing so would greatly assist in addressing previous comments by EPA on development of soil lead clean up goals. Documents are: USEPA. 2003. TRW Recommendations for Performing human health risk analysis on small arms shooting ranges. OSWER 9285.7-37. March 2003. USEPA 2004. Assessing Intermittent or Variable Exposures at lead sites. OSWER 9285.7-76. Undated but release to the TRW website in 2004. Key points include:	See details of issue below	See Below	See Below	See Below	See Below		
a. Use of area weighted average concentrations for appropriate exposure units so that the site is broken into relatively homogeneous" areas for evaluation.	YES	Shaw will also clarify spatial considerations in the SRAs; i.e., identify the locations where site-related contaminants in soil exceed cleanup levels and may represent a health threat to receptors constrained to C4small exposure units (e.g., construction worker and on-site resident).		Yes			
b. Use of time-weighted averages for evaluation of sensitive child and youth receptors	**NO, NOT ENTIRELY RESOLVED**			Yes	Shaw indicated that HHRAs will follow the work plan and that comment is not relevant.	It is appropriate to change procedures based on new guidance. Change management should be included in work plans for Ft McClellan. FYI, change management is being incorporated into work plans for Redstone.	**Not discussed during the meeting; however Army believes the matter has been resolved (please see Note 1 below).**
c. Consideration on when to use an upper bound estimate of the mean for lead	YES			Yes	EPA indicated that the use of a mean of the lead EPC was sufficient		

ATTACHMENT NO. D-5 - HUMAN HEALTH RISK ASSESSMENT

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
d. Consideration of soil sample handling to obtain representative and appropriate soil sample for obtaining lead results for use in the human health risk assessment. Note that these samples may differ from those optimized for evaluation of risks to ecological receptors.	**NO, NOT ENTIRELY RESOLVED**	While the Army had indicated that sampling issues had been addressed in the work plan, EPA had indicated that the work plan should be changed if new guidance became available. The work plan should incorporate new guidance much like what is being done at Redstone Arsenal. Shaw indicated that the geochemistry evaluation allowed the Army to identify specific sample locations where contamination occurs. EPA did not totally agree with this approach due to geospatial issues. Whether this was an RI issue or an FS issue, cleanup decisions needed to be linked to exposure units according to EPA		Yes	Army indicated that sampling issues were addressed in the work plan. No change is planned	It is appropriate to change procedures based on new guidance. Change management should be included in work plans for Ft McClellan. FYI, change management is being incorporated into work plans for Redstone.	**Resolved, please see Agenda Item #3 in minutes of February '06 meeting.**
2. The issues identified for human health so far do not incorporate the comments received from the contractor to ERT through Mark Sprenger on Baby Bains Gap Ranges. For example:	See below			See Below			
a. Comments regarding lack of justification for risk assessment assumptions	YES			Yes	Army indicated that parameter assumptions were in work plan	Team needs to ensure that reviewers have access to work plans- possibly new action item	
b. The improper calculation of the cleanup goal using a target hazard quotient of 1.49	NO, NOT ENTIRELY RESOLVED	As a result of the discussion, Shaw will add language to the streamlined risk assessment (SRA) and the response to the "Lingering Issues" comment to further justify developing cleanup levels based on a target hazard index (HI) of 1.49 rather than the threshold value of 1.		Yes		EPA risk manager has decided that a target hazard quotient of 1.49 is inconsistent with the spirit of RAGS and shall not be used to develop cleanup goals at Fort McClellan. A target hazard quotient of 1.00 shall be used.	**Resolved, please see Agenda Item #4 in minutes of February '06 meeting.**
c. The use of all four ranges as an exposure unit is unrealistic. Each range, at most, should be one exposure unit. Small exposure units to evaluate residential receptors should be selected as well.	YES	Shaw will also clarify spatial considerations in the SRAs; i.e., identify the locations where site-related contaminants in soil exceed cleanup levels and may represent a health threat to receptors constrained to small exposure units (e.g., construction worker and on-site resident).		Yes			
d. The criterion used to select media of concern to carry into the FS should be clearly defined	YES			Yes	Army indicated that they had not previously received this comment	The Army did not indicate in the meeting that they disagreed with this comment.	

ATTACHMENT NO. D-5 - HUMAN HEALTH RISK ASSESSMENT

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
e. The FTMC risk assessments rely on work plan information which is not included in the RI/FS reports. This information must be provided with each document in some fashion. Electronic methods for providing this information, for example, posting work plans on a website or including a CD with the work plan along with the RI/FS reports, are acceptable.	YES			Yes	Army indicated that they had not previously received this comment	The Army did not indicate in the meeting that they disagreed with this comment.	
f. Conclusions of the risk assessments must clearly follow from risk assessment results	YES			Yes	Army indicated that they had not previously received this comment	The Army did not indicate in the meeting that they disagreed with this comment.	

Note 1: The genesis of this comment is probably the suggestion to consider two fairly recent lead assessment guidance documents, OSWER 9285.7-37 and OSWER 9285.7-76. The only relevant point from OSWER 9285.7-37 is the suggestion to use sieving in the preoparation of soil samples for lead analysis (please see Note 4 below). The main thrust of OSWER 9285.7-76 is to account for intermitent exposures (i.e., infrequent or of insufficient duration to establish equilibrium) or exposure to multiple sources. The document concludes that exposure at least once weekly for a period of at least 3 months is sufficient to establish equilibrium so that the child and adult blood lead modesl are predictive with sufficient accuracy for risk assessment. It should be noted that all receptors evaluated in FTMC SRAs are assumed to be exposed more frequently than once weekly and for an exposure duration much longer than 3 months. Furthermore, it is assumed that exposure to site media is the only source of exposure to lead. Therefore, the Army concludes that lead cleanup levels developed for these receptors from the child and adult blood lead models (or from the output from these models), based on average lead concentration, meet the guidelines set forth in OSWER 9285.7-76. Note 2 continues…

Note 1 continued: This comment also refers to the greater sensitivity of the child receptor compared with the adult. This greater sensitivity is addressed in the default assumptions incorporated into the child blood lead model; it is not related to the use of time-weighted averages. As explained above, the use of time-weighted average would be applicable only when equilibrium is not reached or multiple sources of exposure are being evaluated. Such is not the case at FTMC.

ATTACHMENT NO. D-7 - ECOLOGICAL RISK ASSESSMENT REVIEW

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
1. If risk is found in PERA then the next step is to proceed from Step 3a to full BERA (Steps 3b through 8). In many cases, risk is not appropriately dealt with in decisions concerning sites.	YES	EPA indicated that Eco Risk Comments 1-8 have been or are being addressed in recent reports and that EPA has no residual concerns.		Yes			
2. Future Human Use Considerations have been used to state "No Further Action" for ecological risk. Regardless of future human use plans for sites, ecological risks should be addressed independently.	YES	EPA indicated that Eco Risk Comments 1-8 have been or are being addressed in recent reports and that EPA has no residual concerns.		Yes			
3. Risk Management Decisions must be removed from the Risk Assessment sections of reports.	YES	EPA indicated that Eco Risk Comments 1-8 have been or are being addressed in recent reports and that EPA has no residual concerns.		Yes			
4. Previous comments have not been addressed in revisions to documents. Examples of unresolved comments are listed in the following items.	YES	EPA indicated that Eco Risk Comments 1-8 have been or are being addressed in recent reports and that EPA has no residual concerns.		Yes			
5. Selection of receptors of concern - conceptual site model development. A discussion of the toxicity of lead via direct exposure to ecological receptors needs to be addressed. The conceptual site model should also address potential exposure via the groundwater pathway	YES	EPA indicated that Eco Risk Comments 1-8 have been or are being addressed in recent reports and that EPA has no residual concerns.		Yes			
6. Selection of appropriate screening benchmarks and PRGs: Justification must be provided for screening benchmarks and PRGs used in ERAs.	YES	EPA indicated that Eco Risk Comments 1-8 have been or are being addressed in recent reports and that EPA has no residual concerns.		Yes			
7. Inconsistencies in selection of risk based remedial goals (RBRGs): Justification for all values selected as a basis for RBRGs must be provided. Selection should be as consistent as possible. Where RBRGs are based on a variety of values, the text should support the selection and explain the degree to which the selected value is protective.	YES	EPA indicated that Eco Risk Comments 1-8 have been or are being addressed in recent reports and that EPA has no residual concerns.		Yes			
8. Lead Modeling and Other Lead Specific Issues	YES	EPA indicated that Eco Risk Comments 1-8 have been or are being addressed in recent reports and that EPA has no residual concerns.		Yes			
a. Risk Hypothesis- protection of birds from ingestion of lead particles should be included as a risk hypothesis	YES	EPA indicated that Eco Risk Comments 1-8 have been or are being addressed in recent reports and that EPA has no residual concerns.		Yes			
b. Earthworm Toxicity and Bioaccumulation Tests- Uncertainties with the results of these tests need to be addressed.	YES	EPA indicated that Eco Risk Comments 1-8 have been or are being addressed in recent reports and that EPA has no residual concerns.		Yes			
c. Interpretation of Toxicity Testing Results - The uncertainties mentioned above result in ambiguity in the results of the earthworm toxicity tests. These uncertainties need to be addressed.	YES	EPA indicated that Eco Risk Comments 1-8 have been or are being addressed in recent reports and that EPA has no residual concerns.		Yes			
d. Ingestion of Lead by Birds- Consensus is needed on parameter values used in the modeling of risks from this exposure pathway. For example, modification of the ingestion rates and AUFs must be justified and agreed upon with EPA.	YES	After significant discussion, there was agreement that the 83 days (arithmetic mean for the range of grit retention times) would serve as a reasonable estimate. Additional discussion and rationale for the selection of the grit retention times used in the P&L model will be included in the revised reports. Protection of individual vs. population: EPA indicated that it does support protection of populations rather than individual and noted that a 20% population impact level is used in the risk assessments. The group was in agreement regarding this issue.		Yes			

ATTACHMENT NO. D-7 - ECOLOGICAL RISK ASSESSMENT REVIEW

Original EPA Comment	Was Issue Resolved at the Jan 05 Meeting?	Resolutions from Army's Meeting Summary	Listed as Unresolved in Meeting Summary	Was Topic Discussed?	Additions to Army's Meeting Summary	Further EPA Comment	Outcome of February 2006 BCT Meeting
9. The particle ingestion model. Interpretation of results of the particle ingestion model is overly simplistic, because it assumes that loss of avians from the local population due to ingestion of a bullet fragment is similar to hunting (i.e., some individuals killed but remaining individuals healthy). The local population of avians is affected when some individuals succumb to ingested bullet fragments combined with the overall adverse health effects on remaining individuals that are exposed to lead in soil and diet. Therefore the local population receives a double whammy that was not evaluated by looking at the endpoints separately. When local population suffers mortality or fails to reproduce due to exposure to lead, this not only affects the local population but will also affect the larger surrounding population by recruiting avians to make up a local population sink. Loss of 10 percent of avians from the local population per year, while it may be a number too small to measure with field surveys, would be a large effect from a resource management perspective, especially if losses accrue from year to year.	YES	EPA further indicated that Comments 9 and 10 were more of observations rather than EPA asking for a change in approach.		Yes			
10. Size of site requiring clean up. EPA has an interest in cleanup of small sites when the ecological risk assessment has determined there is unacceptable risk. Population-level effects are not necessary to trigger action.	YES	EPA further indicated that Comments 9 and 10 were more of observations rather than EPA asking for a change in approach.		Yes			
11. The NEBA approach. Regarding the NEBA approach, active remediation does not automatically translate into injury to a natural resource. Assessment of injury should be conducted in close partnership and cooperation with the natural resource trustees, so that the nature of injury and recovery times are accurate. Efficiency recommends that trustees be involved in drafting the NEBA reports rather than involving trustees in the review when reports are complete.	YES	The Army (FTMC) responded to Comment 11 (concerning NEBA) and stated that the NEBA process (CH2M Hill is the NEBA contractor) is moving forward at FTMC albeit slowly.		Yes			
12. EE/CAs versus the RI/FS Process. One the major problem with EE/CAs is that media samples are collected to address potential clean up cost, not to answer risk questions. The result of this approach may be that risks are not adequately addressed. The Army should be aware that additional sampling may be needed following an EE/CA to address risk assessment concerns.	YES	EPA indicated that Comment 12 (EE/CAs vs. RI/FSs) was an "FYI" issue. It was also pointed out that the Army agreed to conduct RI/FSs on small arms ranges almost two years ago so this issue is no longer relevant.		Yes			

ATTACHMENT E
FACILITATOR NOTES AND OBSERVATIONS

Team: Fort McClellan Tier I

1. **Meeting Location:** Ft McClellan

2. **Dates:** February 14-16, 2006

3. **Purpose of the visit:** __ Partnering Workshop _X_ Partnering Meeting __Planning Session __ Coaching __ Initial Interview Session _X_ Issue Resolution __ Other

4. **Facilitator:** David G. Smith

5. **Number of attendees and organizations :** 20 participants. See minutes for organizations

6. **Guests and Link and their organizational affiliations:**
None.

7. **Stage of Team Development:**
___ Forming:__ Storming: __ Norming:_X-_ Performing:
___High Performing

8. Significant issues and/or events:
Goals and Successes: The team had not met for more than one year and interpersonal/inter-organizational tensions were at a significant level. This meeting took the form of a specialty meeting called to address "lingering issues" associated with the restoration process. These issues had been identified in the January, 2005 meeting and written comments and responses prepared and distributed. The issues remained unresolved.

All agenda issues were discussed and solutions were agreed upon or processes established to address details and/or strategies.

9. Partnering Performance and Training:

Absent the initial skirmishes that marked earlier gatherings, the meeting tone was businesslike and cordial. Positional stances were minimized and conversations were absolutely **issue** driven (as opposed to personal). The focused meeting agenda, effective meeting management by the co-chairs, obvious pre-meeting preparation by the participants, and the businesslike working environment all contributed to the meeting's success.

The most significant element in this highly successful effort was the attitude with which the participants approached the difficult tasks and decisions. There appeared to be a clear commitment to listening, mutual respect, and reasonable compromise and productivity.

10. **Summary**:

This meeting was by far the most productive of any Fort McClellan meeting that I have seen in my many years of working with this team.

11. Recommendations:

The Fort McClellan Tier I team can build upon this clear success by scheduling **more frequent (semi-monthly) meetings** with tightly structured, focused, and highly specific agendas. Conference calls are not likely to be a particularly productive format. Facilitator again recommends building **proactive** (as opposed to reactive) **objective-driven agendas** jointly developed by members of a small Executive Committee well in advance of meeting dates. Technical issues should be addressed as a finite component and technical consultants should participate in that portion of the meeting (only). Pre-meeting review and comment submission for relevant documents will be critical to keeping the process moving.

Additional recommendations include:

- Reconvene subcommittees to address specific issues.
- "Comments" restructuring:
  1. Talk before writing/issuing comments
  2. Identify informational/no action required comments as such
  3. Be aware of comment tone and wording
- **Identify** conclusions when reached **and move on** (don't continue talking them)
- Schedule a sequence of meetings well in advance

.

12. Goals/Plans/Actions for Next Meeting:. Next BCT should be scheduled promptly.

13. Next meeting dates: tbd